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JVC

SCHEMATIC DIAGRAMS

COLOUR TELEVISION

AV-2186ME, AV-21MS16/H, AV-21MS26, AV-21MX16/G, AV-21MX16/S, AV-21MX56/S, AV-21MX76/G

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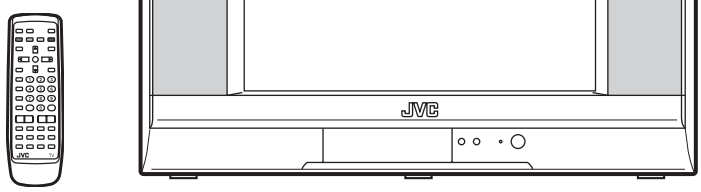
BASIC CHASSIS
CW3

InteriArt

MaxxBass®



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AV-2186ME, AV-21MS16/H, AV-21MS26, AV-21MX16/G, AV-21MX16/S, AV-21MX56/S, AV-21MX76/G

STANDARD CIRCUIT DIAGRAM

■ NOTE ON USING CIRCUIT DIAGRAMS

1.SAFETY

The components identified by the ⚠ symbol and shading are critical for safety. For continued safety replace safety ciritical components only with manufactures recommended parts.

2.SPECIFIED VOLTAGE AND WAVEFORM VALUES

The voltage and waveform values have been measured under the following conditions.

(1)Input signal	: Colour bar signal
(2)Setting positions of each knob/button and variable resistor	: Original setting position when shipped
(3)Internal resistance of tester	: DC 20kΩ/V
(4)Oscilloscope sweeping time	: H ⇒ 20μs / div
	: V ⇒ 5ms / div
	: Othters ⇒ Sweeping time is specified
(5)Voltage values	: All DC voltage values

∗ Since the voltage values of signal circuit vary to some extent according to adjustments, use them as reference values.

3.INDICATION OF PARTS SYMBOL [EXAMPLE]

● In the PW board : R209 → R209

4.INDICATIONS ON THE CIRCUIT DIAGRAM

(1)Resistors

● Resistance value

No unit	: [Ω]
K	: [kΩ]
M	: [MΩ]

● Rated allowable power

No indication	: 1/16 [W]
Others	: As specified

● Type

No indication	: Carbon resistor
OMR	: Oxide metal film resistor
MFR	: Metal film resistor
MPR	: Metal plate resistor
UNFR	: Uninflammable resistor
FR	: Fusible resistor

∗ Composition resistor 1/2 [W] is specified as 1/2S or Comp.

(2)Capacitors

● Capacitance value

1 or higher	: [pF]
less than 1	: [μF]

● Withstand voltage

No indication	: DC50[V]
Others	: DC withstand voltage [V]
AC indicated	: AC withstand voltage [V]

∗ Electrolytic Capacitors

47/50[Example]: Capacitance value [μF]/withstand voltage[V]

● Type

No indication	: Ceramic capacitor
MM	: Metalized mylar capacitor
PP	: Polypropylene capacitor
MPP	: Metalized polypropylene capacitor
MF	: Metalized film capacitor
TF	: Thin film capacitor
BP	: Bipolar electrolytic capacitor
TAN	: Tantalum capacitor

(3)Coils

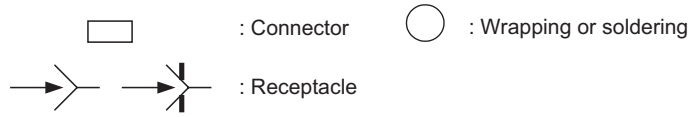
No unit	: [μH]
Others	: As specified

(4)Power Supply

∗ Respective voltage values are indicated

(5)Test point

(6)Connecting method



(7)Ground symbol

: LIVE side ground
: ISOLATED(NEUTRAL) side ground
: EARTH ground
: DIGITAL ground

5.NOTE FOR REPAIRING SERVICE

This model's power circuit is partly different in the GND. The difference of the GND is shown by the LIVE : (⊥) side GND and the ISOLATED(NEUTRAL) : (⏚) side GND. Therefore, care must be taken for the following points.

(1)Do not touch the LIVE side GND or the LIVE side GND and the ISOLATED(NEUTRAL) side GND simultaneously. if the above caution is not respected, an electric shock may be caused. Therefore, make sure that the power cord is surely removed from the receptacle when, for example, the chassis is pulled out.

(2)Do not short between the LIVE side GND and ISOLATED(NEUTRAL) side GND or never measure with a measuring apparatus measure with a measuring apparatus (oscilloscope, etc.) the LIVE side GND and ISOLATED(NEUTRAL) side GND at the same time. If the above precaution is not respected, a fuse or any parts will be broken.

◆ **Since the circuit diagram is a standard one, the circuit and circuit constants may be subject to change for improvement without any notice.**

NOTE

◆ **Due improvement in performance, some part numbers show in the circuit diagram may not agree with those indicated in the part list.**
When ordering parts, please use the numbers that appear in the Parts List.

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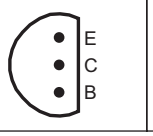
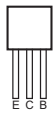
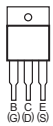
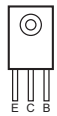
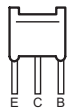
USING P.W. BOARD

P.W.B ASS'Y name	AV-2186ME	AV-21MX56/S	AV-21MX76/G	AV-21MS16/H
MAIN P.W. BOARD	SCW-1901A-H2	SCW-1911A-H2	SCW-1908A-H2	SCW-1903A-H2
BASS P.W. BOARD	SCW-6001A-H2	←	←	←

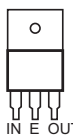
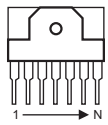
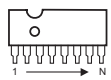
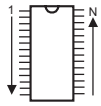
P.W.B ASS'Y name	AV-21MS26	AV-21MX16/G	AV-21MX16/S
MAIN P.W. BOARD	SCW-1902A-H2	SCW-1910A-H2	SCW-1912A-H2
BASS P.W. BOARD	SCW-6001A-H2	←	←

SEMICONDUCTOR SHAPES

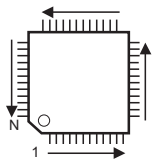
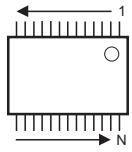
TRANSISTOR

BOTTOM VIEW	FRONT VIEW				TOP VIEW
					CHIP TR

IC

BOTTOM VIEW	FRONT VIEW			TOP VIEW
				

CHIP IC

TOP VIEW		
		

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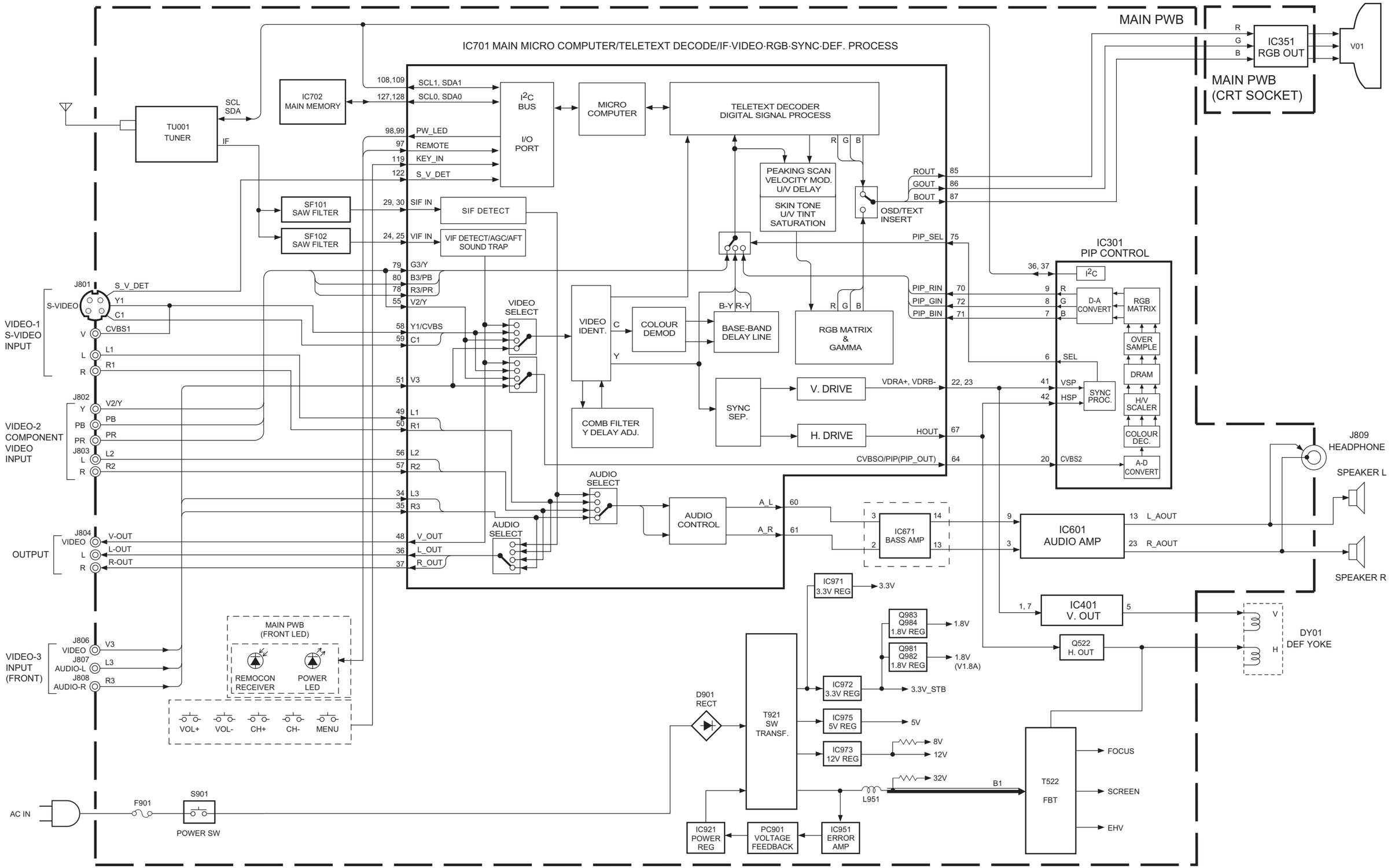
BLOCK DIAGRAMS

[AV-2186ME, AV-21MX56/S,AV-21MX76/G]



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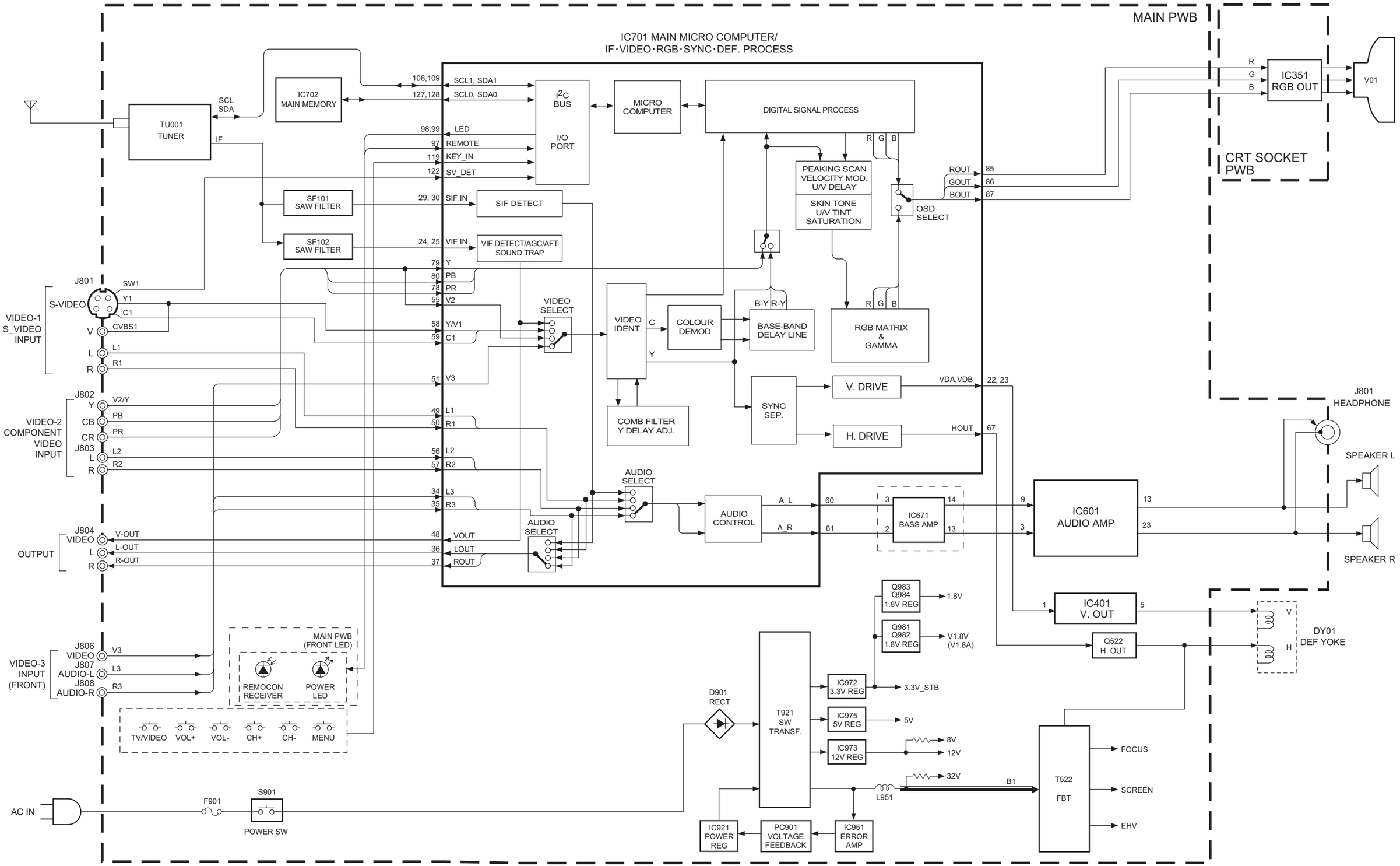
[AV-21MS16/H, AV-21MS26, AV-21MX16/G, AV-21MX16/S]



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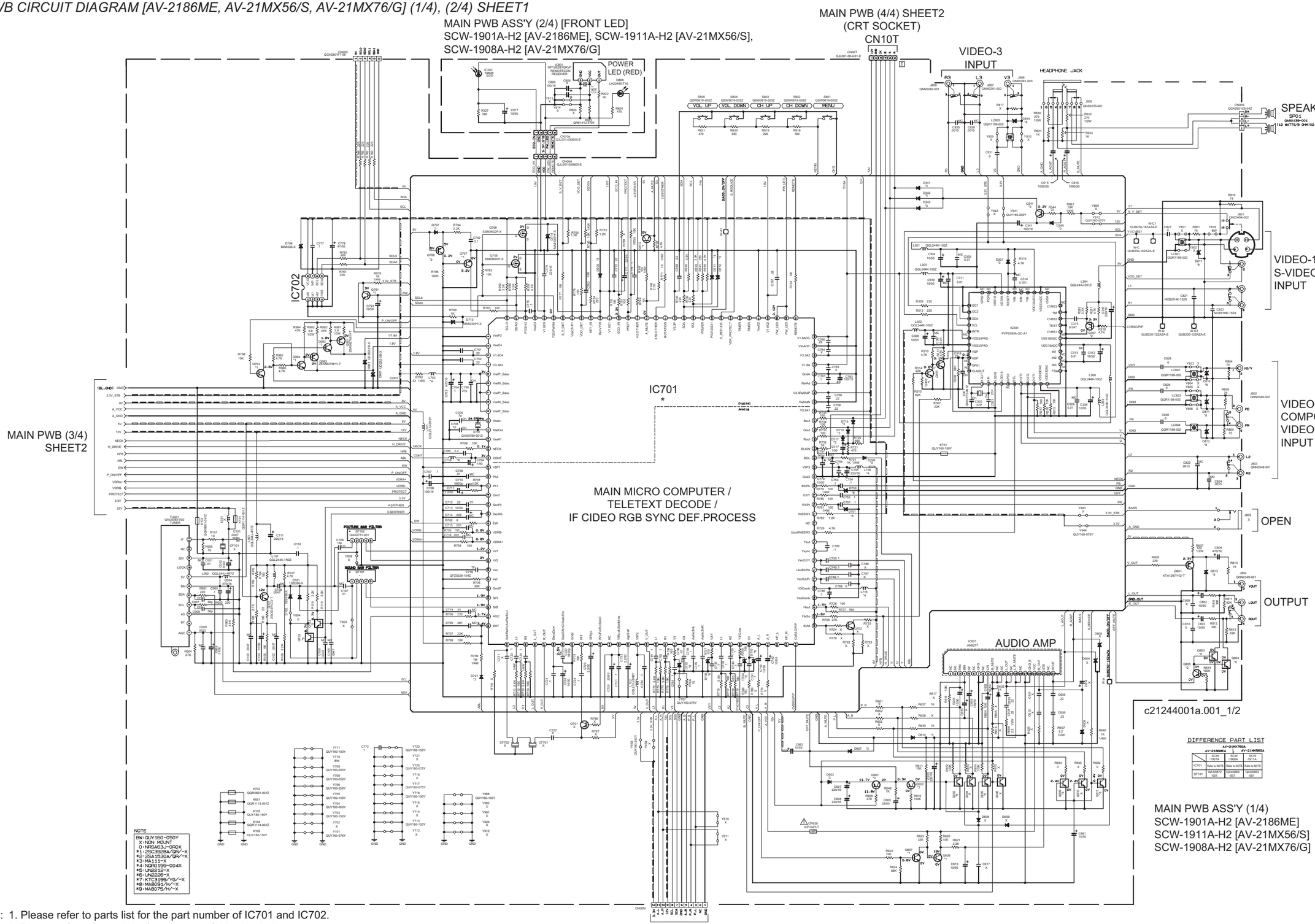
CIRCUIT DIAGRAMS

MAIN PWB CIRCUIT DIAGRAM [AV-2186ME, AV-21MX56/S, AV-21MX76/G] (1/4), (2/4) SHEET1



Note: 1. Please refer to parts list for the part number of IC701 and IC702.
2. Please refer to page 2-25 for voltages of this circuit diagram.
3. Please refer to page 2-26 for waveforms of this circuit diagram.

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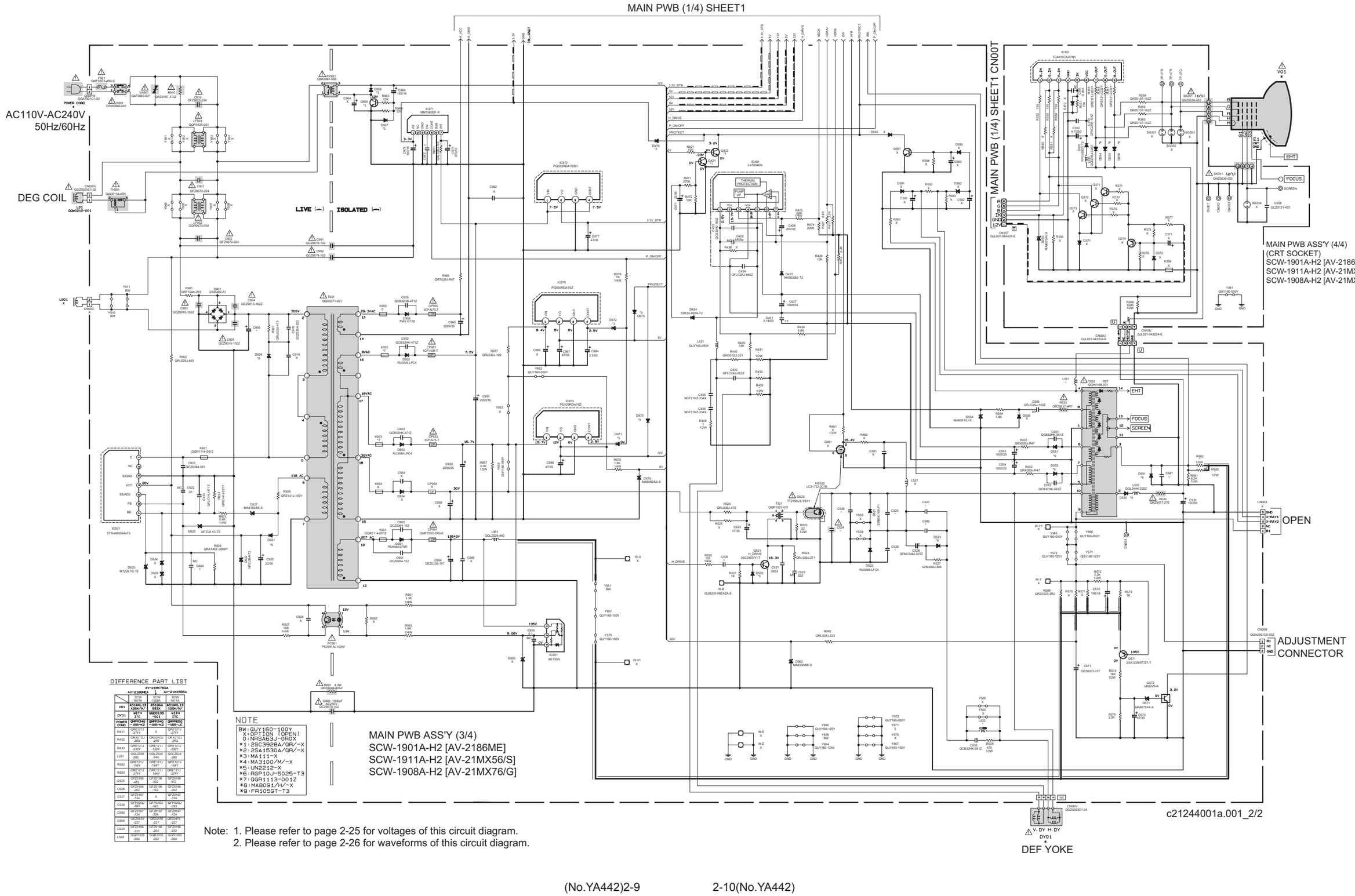
MAIN PWB CIRCUIT DIAGRAM [AV-2186ME, AV-21MX56/S, AV-21MX76/G] (3/4), (4/4) SHEET 2



	AV-2186ME/EA	AV-21MX76/GA	AV-21MX56SA
V01	SCW-1901A A51AKL13 X25K/M/	SCW-1908A A51GAA 993X	SCW-1911A A51AKL13 X25K/M/
DY01	W1TW 1TC	QUDY155 -001	W1TW 1TC
POWER CORD	QMNS342 -165-K2	QMNS342 -165-K2	QMNW852 -165-JC
R431	QRE121J -271Y	X	QRE121J -271Y
R432	QRX011J -2R2	QRX011J -2R2	QRX011J -2R2
R433	QRE121J -330Y	QRE121J -120Y	QRE121J -330Y
L551	QQL2026 -240	QQL2026 -240	QQL2026 -240
R582	QRE121J -154Y	QRE121J -184Y	QRE121J -154Y
R583	QRE121J -274Y	QRE121J -184Y	QRE121J -274Y
C525	QFZ0196 -272	QFZ0196 -272	QFZ0196 -272
C526	QFZ0196 -152	QFZ0196 -152	QFZ0196 -152
C527	QFZ0197 -224	X	QFZ0197 -224
C528	QFP302J -393	QFP302J -393	QFP302J -393
C582	QFZ0197 -224	QFZ0197 -224	QFZ0197 -224
C906	QCZ0017 -227	QCZ0478 -227	QCZ0478 -227
C524	QFZ0196 -232	QFZ0196 -202	QFZ0196 -232
L522	QQR1008 -004	QQR1005 -002	QQR1005 -004

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MAIN PWB CIRCUIT DIAGRAM [AV-21MS16/H, AV-21MS26] (1/4), (2/4) SHEET 3

MAIN PWB ASS'Y (2/4) (FRONT LED)
SCW-1903A-H2 [AV-21MS16/H]
SCW-1902A-H2 [AV-21MS26]

MAIN PWB (4/4) SHEET4
(CRT SOCKET) CN10T

VIDEO-3
INPUT

HEADPHONE JACK

SPEAKER

VIDEO-1
S-VIDEO
INPUT

VIDEO-2
COMPONENT
VIDEO
INPUT

OPEN

OPEN

MAIN PWB (3/4)
SHEET4

IC701 *

MAIN MICRO COMPUTER/
TELTEXT DECODE/
IF VIDEO RGB SYNC DEF. PROCESS

AUDIO AMP

c21243001a.001_1/2

DIFFERENCE PART LIST

	AV-21MS16HA / AV-21MS16BA	AV-21MS16BA
	SCW-1903A	SCW-1903A
IC701	Refer to NOTE	Refer to NOTE
W-X	X	QUB230-122AZA-E
W-Y	X	QUB230-152XA-E

MAIN PWB ASS'Y (1/4)
SCW-1903A-H2 [AV-21MS16/H]
SCW-1902A-H2 [AV-21MS26]

NOTE
BW:QUY160-050Y
X:NON MOUNT
0:NRSM63J-0R0X
*1:2SC3928A/GR/-X
*2:2SA1530A/GR/-X
*3:MA111-X
*4:NDR0199-004X
*5:UN2212-X
*6:UN2226-X
*7:KTC3199/YG/-X
*8:MA8091/H/-X
*9:MA8075/H/-X

BASS PWB
SHEET7 CN00M

Note: 1. Please refer to parts list for the part number of IC701 and IC702.
2. Please refer to page 2-25 for voltages of this circuit diagram.
3. Please refer to page 2-26 for waveforms of this circuit diagram.

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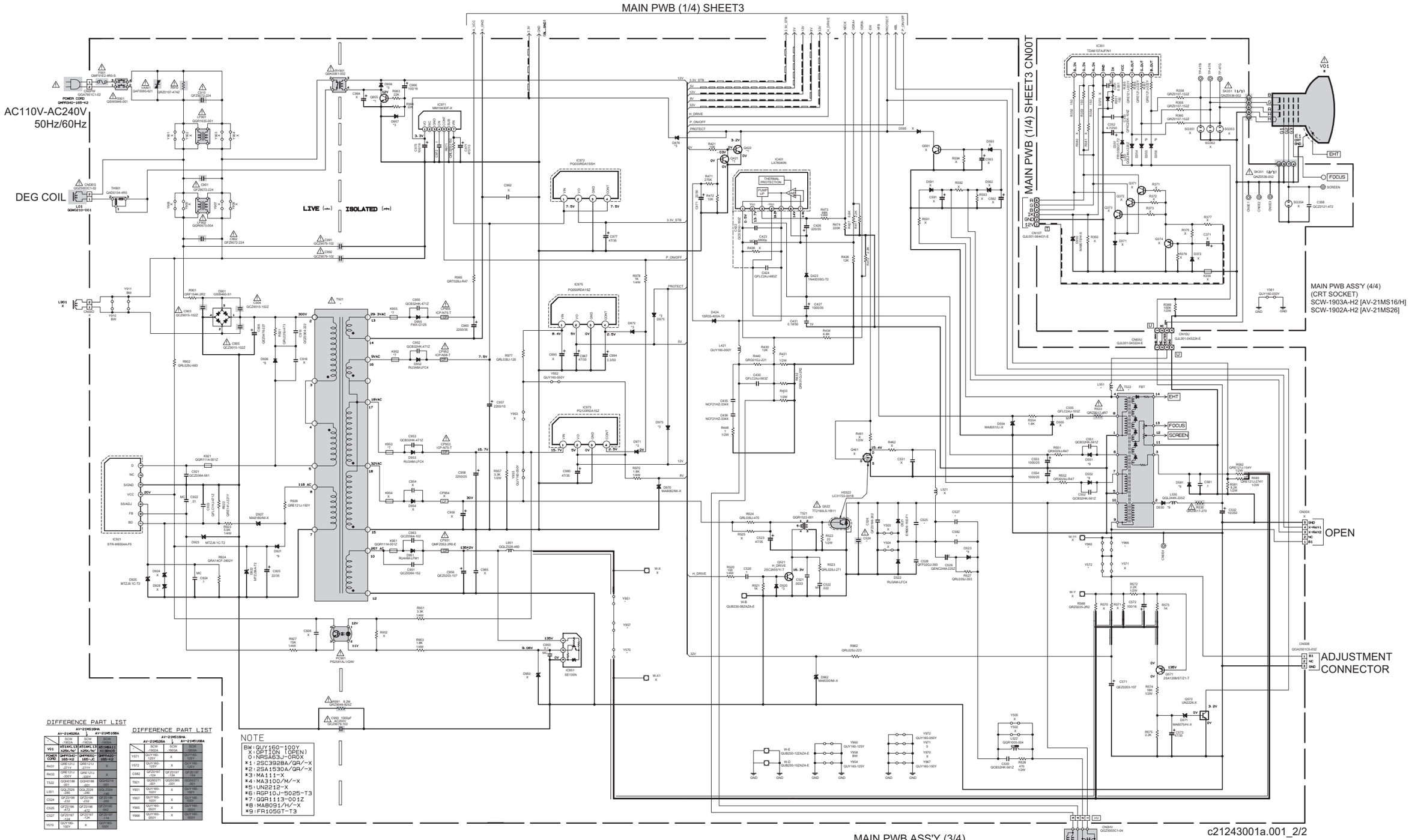
MAIN PWB CIRCUIT DIAGRAM [AV-21MS16/H, AV-21MS26] (3/4), (4/4) SHEET 4



Note: 1. Please refer to page 2-25 for voltages of this circuit diagram.
2. Please refer to page 2-26 for waveforms of this circuit diagram.

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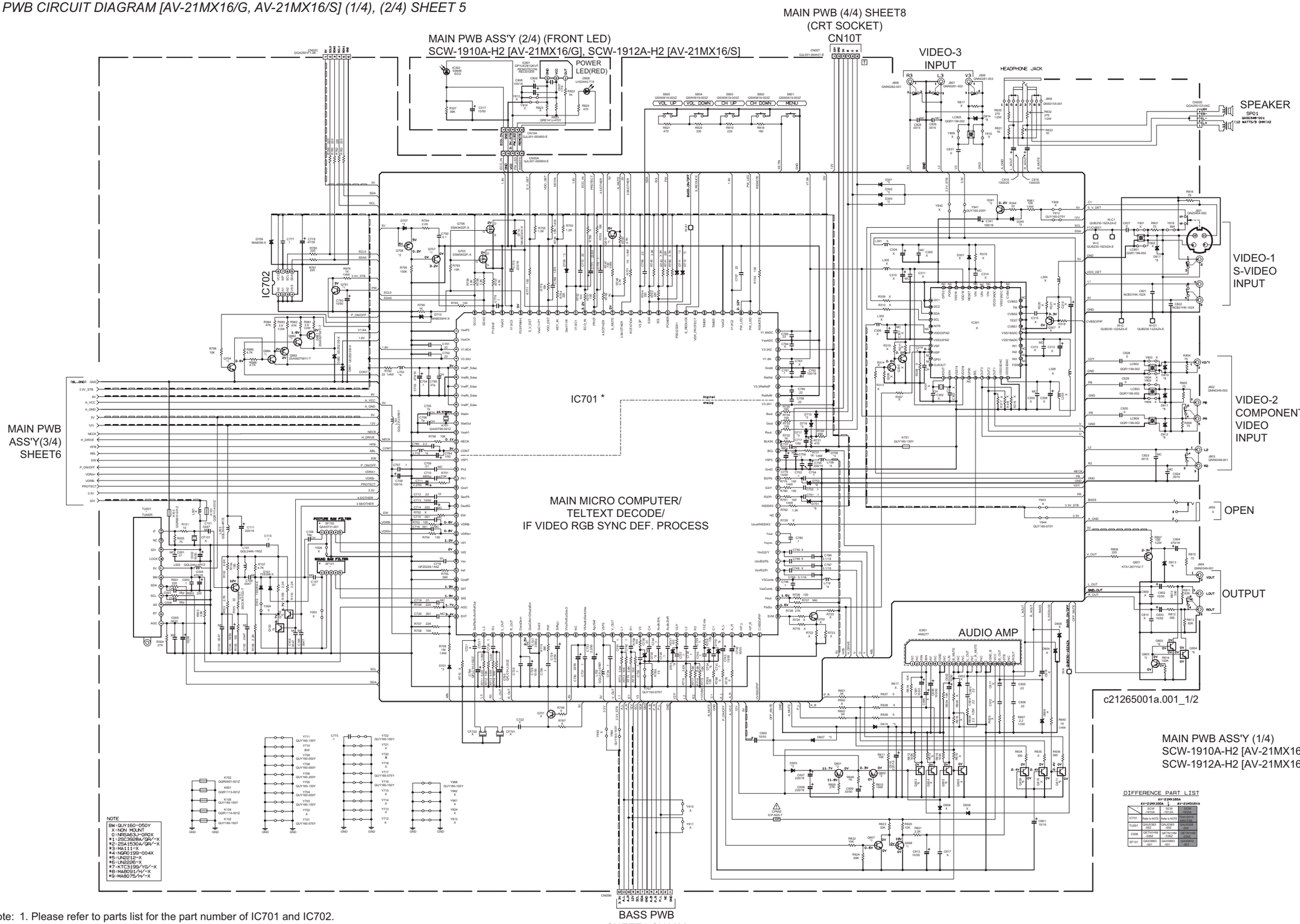
MAIN PWB CIRCUIT DIAGRAM [AV-21MX16/G, AV-21MX16/S] (1/4), (2/4) SHEET 5



NOTE
B:QUY160-050Y
X:NON MOUNT
0:NRS463J-QR0X
*1:2SC3928A/QR/-X
*2:2SA1530A/QR/-X
*3:MA111-X
*4:NQR0199-004X
*5:UN2212-X
*6:UN2226-X
*7:KTC3198/YG/-X
*8:MA8091/H/-X
*9:MA8075/H/-X

DIFFERENCE PART LIST

	AV-21MX16GA	AV-21MX16YA
	SCW-1910A	SCW-1912A
IC701	Refer to NOTE	Refer to NOTE
TU001	QAU0363-002	QAU0363-002
C006	CETNYHM-3362	CETNYHM-3352
SF101	QAX0063-001	QAX0063-001

Note: 1. Please refer to parts list for the part number of IC701 and IC702.
2. Please refer to page 2-25 for voltages of this circuit diagram.
3. Please refer to page 2-26 for waveforms of this circuit diagram.

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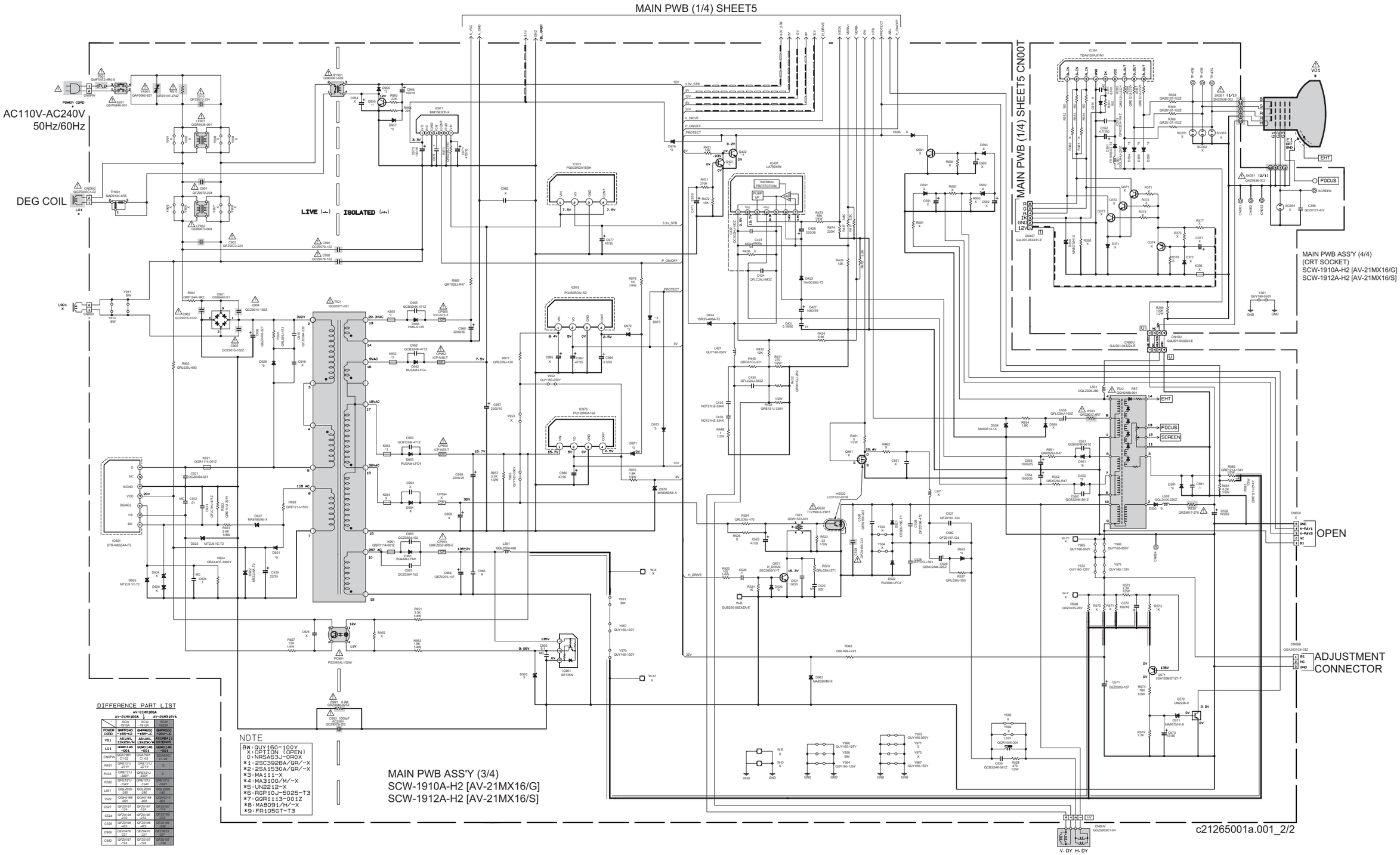
MAIN PWB CIRCUIT DIAGRAM [AV-21MX16/G, AV-21MX16/S] (3/4), (4/4) SHEET 6



DIFFERENCE PART LIST

	AV-21MX16BA		AV-21M316VA
	SCW-1910A	SCW-1912A	SCW-1933A
POWER CORD	QMPR1340-165~X2	QMPR1600-155~C	QMPR2000-250~AC
VO1	A51AKL-13X25G/W	A51AKL-13X25K/W	A51NBA11-X23E0X05
L01	QGWO145-001	QGWO146-001	QGWO149-001
CN09W	QGA7001-C1-02	QGA7001-C1-02	QCL6020-C1-02
R431	QRE1212-2711	QRE1212-2711	X
R433	QRE1212-3301	QRE1212-3301	X
R582	QRE1212-1541	QRE1212-1541	QRE1212-1561
L551	QGL2026-280	QGL2026-280	QGL2026-140
T522	QGH0188-001	QGH0188-001	QGH0214-001
C527	QFZ0197-124	QFZ0197-124	QFZ0197-154
C524	QFZ0196-223	QFZ0196-223	QFZ0196-333
C525	QFZ0196-473	QFZ0196-473	QFZ0196-563
C906	QEZ0476-227	QEZ0476-227	QEZ0633-227
C582	QFZ0197-124	QFZ0197-124	QFZ0197-154

NOTE

BW:QUY160-100Y
X:OPTION (OPEN)
0:NRSA63J-0R0X
*1:2SC3928A/QR/-X
*2:2SA1530A/QR/-X
*3:MA111-X
*4:MA3100/M/-X
*5:UN2212-X
*6:RGP10J-5025-T3
*7:QGR1113-001Z
*8:MA8091/H/-X
*9:FR105GT-T3

Note: 1. Please refer to page 2-25 for voltages of this circuit diagram.
2. Please refer to page 2-26 for waveforms of this circuit diagram.

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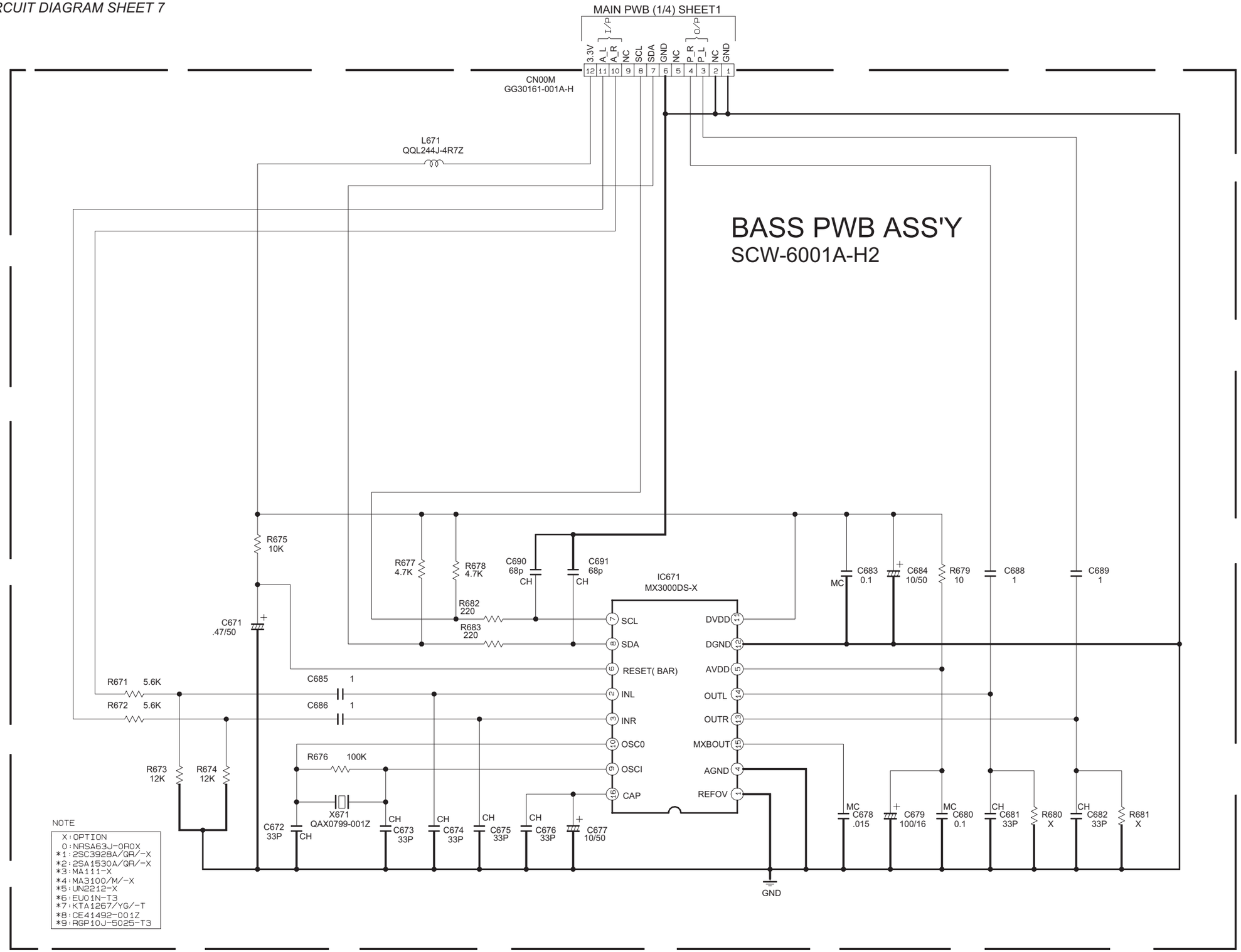
BASS PWB CIRCUIT DIAGRAM SHEET 7



Note: 1. Please refer to page 2-25 for voltages of this circuit diagram.

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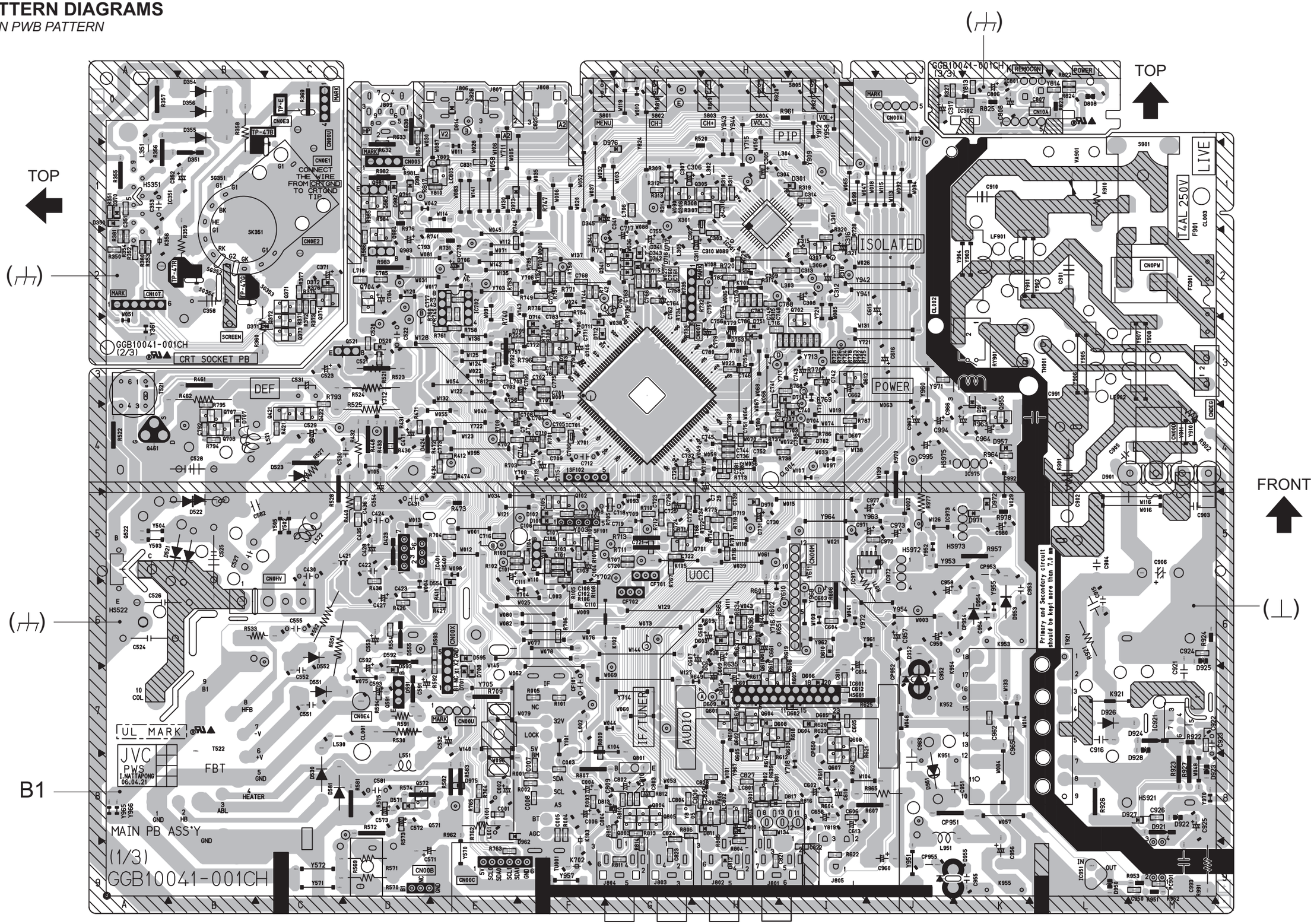
PATTERN DIAGRAMS

MAIN PWB PATTERN



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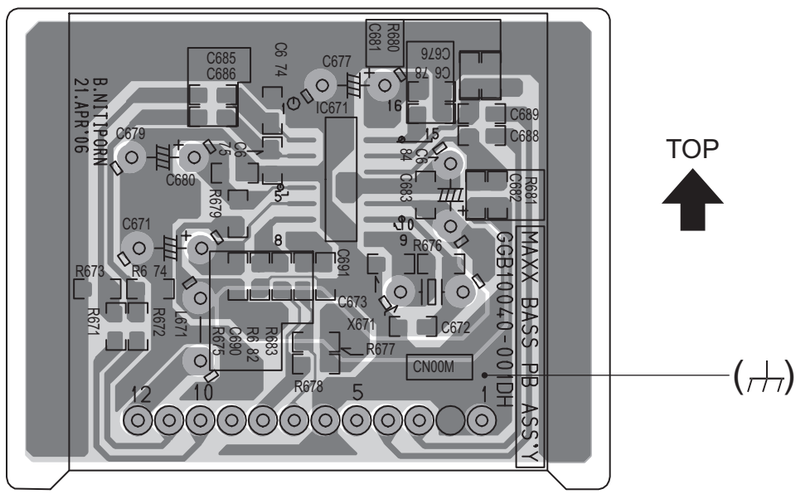
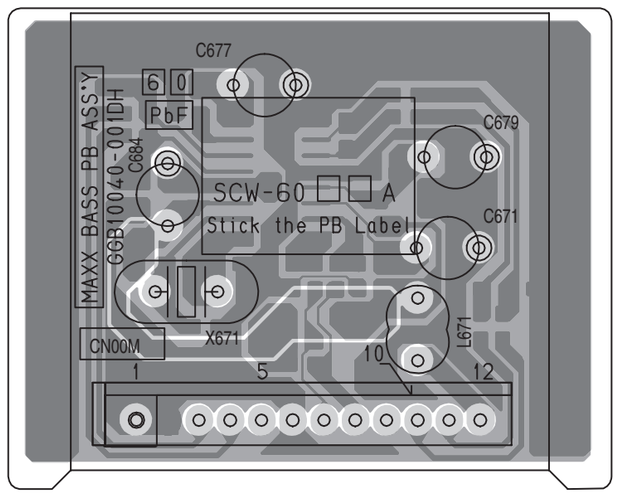
BASS PWB PATTERN [SOLDER SIDE]



BASS PWB PATTERN [PARTS SIDE]



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VOLTAGE CHARTS

<MAIN PWB>

MODE PIN NO.	DC (V)
IC401	
1	0.5
2	13.7
3	-11.7
4	-13.8
5	0.2
6	13.9
7	0.4
IC601	
1	0
2	NC
3	0
4	NC
5	25.9
6	NC
7	0
8	NC
9	0
10	NC
11	0.5
12	NC
13	12.9
14	NC
15	0.7
16	NC
17	0
18	NC
19	27.2
20	NC
21	16.7
22	NC
23	12.8
IC701	
1	0
2	0
3	1.9
4	3.3
5	3.1
6	0
7	3.2
8	0
9	3.2
10	1.5
11	1.3
12	0
13	0.1
14	2.5
15	4.9
16	1.9
17	2.3
18	0
19	2.3
20	2.3
21	0
22	0.8
23	0.9
24	1.9
25	1.9
26	2.3
27	1.9
28	0.2
29	1.9
30	1.0
31	4.3
32	3.1
33	2.2
34	2.1
35	2.2
36	3.5
37	3.4
38	2.2
39	2.5
40	0
41	3.0
42	1.4
43	2.7
44	2.2
45	8.3
46	2.0
47	5.0
48	1.3
49	2.2
50	2.0
51	1.5
52	1.4
53	2.2
54	2.1
55	1.3
56	2.2
57	1.3
58	1.8
59	1.4
60	1.3
61	3.7
62	1.3
63	3.5
64	0.5

MODE PIN NO.	DC (V)
65	1.9
66	1.4
67	1.5
68	0.2
69	4.9
70	1.3
71	1.4
72	1.3
73	2.0
74	1.7
75	0.4
76	0
77	3.3
78	1.3
79	1.3
80	1.3
81	0
82	4.9
83	2.1
84	3.4
85	2.1
86	2.1
87	2.1
88	3.3
89	0
90	3.3
91	1.6
92	0
93	1.9
94	3.3
95	0
96	1.9
97	3.0
98	0.1
99	0.1
100	2.1
101	0
102	2.4
103	2.5
104	0
105	0.2
106	2.6
107	0
108	2.2
109	1.1
110	3.3
111	0
112	3.3
113	0
114	3.3
115	1.1
116	2.6
117	1.9
118	1.8
119	3.3
120	3.1
121	0
122	3.3
123	0.1
124	1.9
125	0
126	3.3
127	3.2
128	3.2
IC702	
1	0
2	0
3	0
4	0
5	3.2
6	3.2
7	0
8	3.3
IC921	
1	125.4
2	NC
3	0
4	19.7
5	4.0
6	1.7
7	0.3
IC951	
1	135.5
2	9.4
3	0
IC971	-
IC972	
1	6.4
2	3.3
3	0
4	6.4
IC973	
1	15.4
2	11.8
3	0
4	2.5

MODE PIN NO.	DC (V)
IC975	
1	8.2
2	4.8
3	0.2
4	2.5
Q101	
E	2.4
C	11.8
B	3.1
Q102	
E	0
C	0.2
B	3.1
Q103	
E	0
C	0.1
B	3.1
Q305	-
Q306	-
Q307	-
Q341	
E	11.8
C	1.0
B	11.8
Q421	
E	0
C	0
B	0.6
Q422	
E	1.1
C	1.3
B	0
Q521	
E	0
C	10.9
B	0
Q522	
E	0
C	122.0
B	-0.1
Q571	
E	135.4
C	0
B	135.1
Q572	
E	0
C	3.2
B	-0.7
Q601	
E	11.8
C	0.4
B	11.8
Q602	
E	0.2
C	-0.2
B	0
Q603	
E	0
C	0
B	-0.3
Q605	
E	0
C	0
B	-0.2
Q607	
E	0.1
C	0
B	0.6
Q608	
E	0
C	18.5
B	0
Q609	
E	0
C	0
B	0
Q611	
E	0
C	0
B	0
Q612	
E	0
C	5.0
B	0
Q704	
E	0
C	2.5
B	0
Q705	
S	0
D	0.2
G	1.9
Q706	
S	0
D	0
G	1.9

MODE PIN NO.	DC (V)
Q707	
E	0
C	1.2
B	0
Q708	
E	1.2
C	1.3
B	4.9
Q791	
E	0
C	2.9
B	0
Q801	
E	2.2
C	0
B	1.5
Q803	
E	0.5
C	0
B	0
Q804	
E	0
C	0
B	0.2
Q805	
E	0.2
C	0
B	0
Q955	
E	0
C	11.8
B	0
Q981	
E	2.9
C	1.9
B	2.2
Q982	
E	1.9
C	2.2
B	2.5
Q983	
E	2.9
C	1.8
B	2.2
Q984	
E	1.9
C	2.2
B	2.5
TU001	
1	4.3
2	0.5
3	0
4	2.2
5	2.2
6	4.9
7	4.9
8	0.7
9	35.1
11	0

<MAIN PWB>
(FRONT LED)

MODE PIN NO.	DC (V)
IC302	
1	2.6
2	3.3
IC801	
1	3.0
2	3.3
3	0

<MAIN PWB>
(CRT SOCKET)

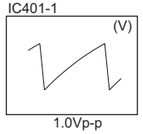
MODE PIN NO.	DC (V)
IC351	
1	2.2
2	2.1
3	2.1
4	0
5	4.6
6	194.7
7	118.3
8	118.3
9	115.8

<BASS PWB>

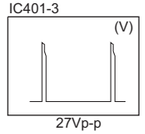
MODE PIN NO.	DC (V)
IC671	
1	0
2	1.2
3	1.2
4	0
5	3.2
6	3.3
7	2.3
8	2.1
9	1.4
10	1.5
11	3.3
12	0
13	1.6
14	1.6
15	0.1
16	1.2

WAVEFORMS

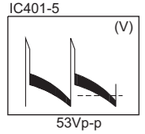
-MAIN PWB-

IC401-1


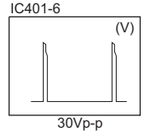
1.0Vp-p

IC401-3


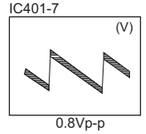
27Vp-p

IC401-5


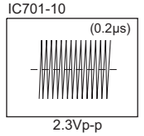
53Vp-p

IC401-6


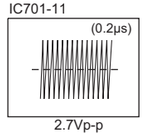
30Vp-p

IC401-7


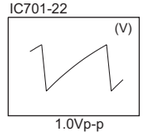
0.8Vp-p

IC701-10


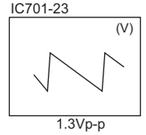
2.3Vp-p

IC701-11


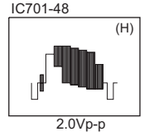
2.7Vp-p

IC701-22


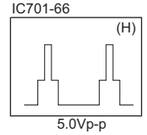
1.0Vp-p

IC701-23


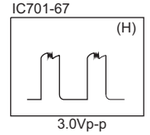
1.3Vp-p

IC701-48


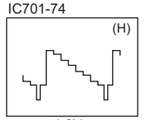
2.0Vp-p

IC701-66


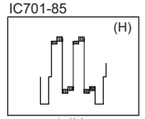
5.0Vp-p

IC701-67


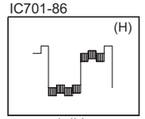
3.0Vp-p

IC701-74


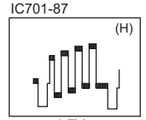
1.2Vp-p

IC701-85


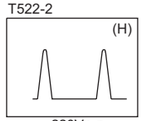
1.4Vp-p

IC701-86


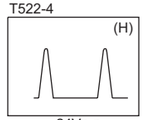
1.4Vp-p

IC701-87


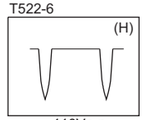
1.7Vp-p

T522-2


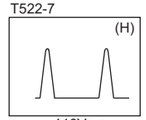
220Vp-p

T522-4


24Vp-p

T522-6


110Vp-p

T522-7


110Vp-p

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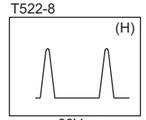
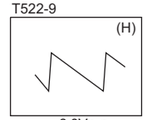
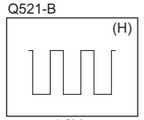


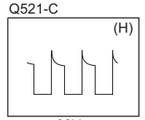
60Vp-p

T522-9


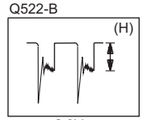
6.0Vp-p

Q521-B


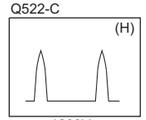
1.3Vp-p

Q521-C


32Vp-p

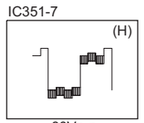
Q522-B


2.0Vp-p

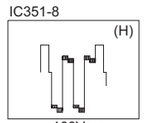
Q522-C


1200Vp-p

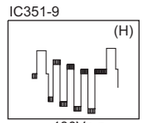
-CRT SOCKET PWB-

IC351-7


80Vp-p

IC351-8


100Vp-p

IC351-9


130Vp-p

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(No.YA442)

Printed in Japan
VPT